

REMARKS/ARGUMENTS

1. Claim 18 recites the limitation “the monitor pattern” in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

5 Response:

Claim 18 is amended to correct the typographical error and to overcome the above-mentioned rejection. The “monitor pattern” recited in claim 18 is corrected with “the process monitor pattern”. Such amendment is fully supported by the specification and no new matter is introduced.
10 Accordingly, the applicant asserts that claim 18 obtains sufficient antecedent basis by the amendment. Reconsideration of claim 18 is respectfully requested.

*2. Claims 1, 3-8 and 10-16 are rejected under 35 U.S.C. 102(b) as being
15 anticipated by West et al. (US Patent 6,521,975 B1).*

Response:

Claim 1 is amended to overcome the claim rejections. Specifically, claim 1 now includes further limitation regarding the cutting area:
20 “wherein the cutting area is contacted with a cutting apparatus for separating individual dies”. Such amendment is fully supported by paragraph [0004]-[0021] of the specification and Figs. 2-4 of the present application. No new matter is introduced.

25 According to the amended claim 1, the process monitor pattern is set in the cutting area, and the dummy metal structure is exposed in the cutting area. Please note that the cutting area is where contacted with a cutting

apparatus for separating individual dies. Inherently, **the process monitor pattern and the dummy metal structure in the cutting area are to contact with the cutting apparatus during the cutting or dicing step.**

5 As mentioned in Pages 6-7 of the previously presented Argument, **the scribe street seal structures disclosed by West are positioned in the seal regions 104 and 105, where the cutting apparatus would never contact,** while the process monitor pattern and the dummy metal structure of the present application are in the cutting area, where the cutting apparatus will
10 contact with for separating individual dies.

Secondly, West particularly disclosed that in the chip singulation process, **the material in dicing line 110 is lost. Consequently, only the material in lengths 104 and 105 remain with their respective circuit.**
15 (Col. 6, lines 60-63). Different from West, **the process monitor pattern and the dummy metal structure of the present application,** which are located in the cutting area that being contacted with and cut by the cutting apparatus, **will be removed in the cutting step.**

20 Thirdly, the seal structures located in the seal region 104 and 105 of West are **to protect the IC from propagating cracks and impurities (col. 6, lines 60-65) originated by rotating saws used in conventional cutting step.** Different from West, the scribe line structure of the present application located in the cutting area is used **to release heat and energy**
25 **originated by laser cutting technology from the cutting area and thus to prevent chip cracks due to lateral explosion.**

According to differences mentioned above, the applicant asserts that

West does not teach the scribe line structure as per the limitation disclosed in claim 1 of the present application. Therefore the reconsideration of claim 1 is respectfully requested.

5 Claims 3-7 are dependent on claim 1 and should be allowed if claim 1 is allowed. Therefore reconsideration of claims 3-7 is politely requested.

10 Claim 8 is amended to overcome the claim rejections. Specifically, claim 8 now includes further limitation that **“the surface of the substrate comprising at least a cutting area to be contacted with a cutting apparatus for separating individual dies”** Such amendment is fully supported by paragraph [0004]-[0021] of the specification and Figs. 2-4 of the present application. No new matter is introduced.

15 According to the amended claim 8, the process monitor pattern and the heat irradiative structure are in the cutting area where to be contacted with a cutting apparatus for separating individual dies. Inherently, the process monitor pattern and the heat irradiative structure disclosed by the present application in the cutting area are to contact with the cutting apparatus
20 during the cutting or dicing step, and the process monitor pattern and the heat irradiative structure will be removed after the cutting or dicing step.

25 As mentioned above, the scribe street seal structures of West are positioned in the seal regions 104 and 105 where the cutting apparatus would never contact. Therefore the scribe street seal structure will not contact with the cutting apparatus, and will remain in the lengths 104 and 105, consequently.

Furthermore, the seal structures of West are used to protect the IC from propagating cracks and impurities while the scribe line structure of the present application is used to release heat and energy originated by laser cutting technology from the cutting area and thus to prevent chip cracks
5 due to lateral explosion.

Accordingly, the applicant asserts that West does not teach the scribe line structure as per the limitation disclosed in claim 8 of the present application. Therefore the reconsideration of claim 8 is respectfully
10 requested.

Claims 10-16 are dependent on claim 8 and should be allowed if claim 8 is allowed. Therefore reconsideration of claims 10-16 is politely requested.
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Claims 17-18 further limit that the process monitor pattern is set under the cutting area where contacts with a cutting apparatus for separating individual dies. Different from the present application, the scribe street seal structures/the process monitor patterns of West are located in seal
20 regions 104 and 105 where the cutting apparatus would never contact as shown in Fig. 1A. Therefore the applicant asserts that claims 17-18 are distinctly different from West, reconsideration of claims 17-18 is respectfully requested.

25 *3. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over West in view of Chooi et al. (US Patent 6,284,657 B1).*


Response:

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Amdt. dated January 18, 2008
Reply to Office action of November 29, 2007

Claims 2 and 9 are respectively dependent on claims 1 and 8, and should be allowed if claims 1 and 8 are allowed. Therefore reconsideration of claims 2 and 9 is politely requested.

5 Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Sincerely yours,

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Winston Hsu, Patent Agent No. 41,526

P.O. BOX 506, Merrifield, VA 22116, U.S.A.

Voice Mail: 302-729-1562

Facsimile: 806-498-6673

15 e-mail : winstonhsu@naipo.com

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